

Application No.: 10/074,992

### **REMARKS**

The Office Action of September 16, 2005 has been carefully considered. Reconsideration of this application, as amended, is respectfully requested.

Claim 6 has been canceled. Claims 5, 16 and 17 were amended to clarify the invention and the limitations set forth therein, and in particular to eliminate the recitation of method terminology. No new matter is believed to have been added by the amendments, as the limitations are consistent in scope with that which was previously set forth. Support for the amendments is found, for example, in FIG. 6 and ¶ [0029] of the as-published application.

Turning now to the office action, claims 5 – 6 and 16 – 17 remain rejected under 35 USC §112, second paragraph, as being indefinite (recite method terminology). Claims 1 – 31 were newly rejected under 35 USC §103(a) as being unpatentable over Contreras (5,824,243) in view of Burris '993. Claims 1 – 31 were also newly rejected under 35 USC §103(a) as being unpatentable over Engelhard et al. (5,942,125) in view of Burris '993.

Considering the rejection under 35 USC §112, second paragraph, claims 5, and 16 - 17 have been amended to clarify the limitations set forth therein, and in particular to eliminate the recitation of method terminology. Applicants respectfully submit that the "method terminology" has been re-characterized in the amended claims as particular limitations associated with recited elements of the claimed device. In view of the claim amendments and cancellation of claim 6, the rejection is respectfully traversed. In the event the rejection is again maintained, Applicants respectfully request that the Examiner specifically set forth those elements that may continue to be objected to as indefinite.

With regard to the rejections set forth under 35 USC §103(a), the rejections are respectfully traversed as more particularly set forth in the arguments presented below.

Considering claims 1 – 31, the claims were rejected under 35 USC §103(a) as being unpatentable over Contreras in view of Burris '993. Applicants urge that Contreras discloses keeping a storage tank of ozone with the water (e.g., Abstract) and further

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discloses continuously ozonating and circulating the ozonated water (col. 2, lines 18-20; col. 3, line 57 – col.4, line 8). Other than in the Abstract, where it is noted that an application of the invention could include dental operatory procedures, it does not appear that further teaching indicates how such a system would be used, nor are the specific aspects in several of the rejected claims found in Contreras.

Furthermore, Contreras simply fails to teach or suggest any vent for the ozone, let alone the recited "reducing system that prevents ozone in the separated gas from escaping into the atmosphere by passing the gas through an ozone reducing material before venting," as in rejected claim 1. Contreras does, however, teach at column 4 lines 5-15 that "actively ozonated water is to flow from the tap," and that excess ozone is handled by "flexible tube 26 connected ... and fed into the storage tank 2 so that the hose is positioned near the bottom of the lid 9 to capture and reuse any excess ozone, thus leaving no waste." Either there is no excess ozone in the Contreras system, or the excess ozone is discharged with the treated water from a tap. In either case, Contreras teaches away from a vent and a reducing system as presently claimed.

Furthermore, the phrase "actively ozonated" is understood to mean that ozonation is still occurring and for that to happen the water would need to be in contact with an ozone containing gas. Based on this information it is urged to be reasonable for one skilled in the art to further interpret Contreras as teaching that the excess gas with ozone is output with the water. It appears that Contreras clearly teaches away from the recited limitations (e.g., claim 1), requiring "a separation system that separates undissolved gas from the ozonated liquid prior to circulating the ozonated liquid through the circulation passageway; a reducing system that prevents ozone in the separated gas from escaping into the atmosphere by passing the gas through an ozone reducing material before venting." (emphasis added)

Although it appears that the Examiner reviewed the same sections of the Contreras patent as Applicants, the rejection nonetheless continues to rely upon the teachings of Burris '993, when it is clear that Burris '993 is a batch system. Burris '993, identified by Applicants, is directed to equipment for purifying batches of liquid with ozone. One example is the treatment of saline solution in an optometrist's office (col. 2, lines 40 – 43). The process of purification consumes ozone - when the liquid is allowed the time for purification to take place then a substantial amount of the

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dissolved ozone is consumed and is not available to further disinfect surfaces that it contacts. Thus, Burris '993 does not appear to disclose the output of a disinfecting liquid.

Furthermore Burris '993 also indicates that it is undesirable to vent ozone directly to the atmosphere without changing it to oxygen (col. 3, lines 24-27). Burris '993 makes it clear that liquid cannot enter the ozone reducer 23 (col. 3, lines 44-56). Yet the rejection fails to indicate why one would, in view of these contrary teachings, have been motivated to combine and modify the teachings of the referenced patents. It is, therefore, unclear what basis the Examiner is relying upon when urging the proposed combination – no citation having been provided in support of the alleged combination.

As a further argument in traversal of the rejection, the Examiner appears to have applied an improper standard for the proposed combination. Applicants respectfully urge that the required standard for obviousness is that “the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art,” not “well within the purview of one of ordinary skill in the art.” Furthermore, the basis that is alleged for the combination – to provide for safe disposal of the off-gas if the system requires abrupt shutdown which would not allow for the time consuming, natural dissipation of the off-gas - is not only unsupported (no citation as to where such a basis is taught or suggested in the patents), but is also contrary to the teachings of the patents themselves. What need would one have to dispose of the ozone when the systems were shut down?

Moreover, the alleged reason for the combination further admits to Contreras' contrary teachings – indeed it appears to “allow for ... natural dissipation of the off-gas as required by return of the off-gas to the reservoir.” Why would one be motivated to provide the reduction and venting of the Burris '993 batch system if Contreras is indeed returning gas to the reservoir and allowing for its natural dissipation? In view of the failure of the rejection to set forth adequate ground to support the proposed combination, *prima facie* obviousness has not been established to which Applicants must or even can respond. Accordingly, Applicants respectfully submit that claims 1 – 31 are in condition for allowance and respectfully request an indication thereof in a subsequent action.

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Considering, *in arguendo*, the combination of Contreras in view of Burris '993, Applicants urge that at most such a combination nonetheless fails to teach a circulation system that circulates liquid containing dissolved ozone and a separation system that separates undissolved gas from the ozonated liquid prior to circulating the ozonated liquid through the circulation passageway – neither of the patents expressly indicating such a feature. Accordingly, claim 1 is patentably distinguishable over the arguable combination of Contreras in view of Burris '993.

Relative to the rejection of claim 13, in addition to being dependent from claim 12, for which no basis for rejection is expressly set forth, the claim further recites “a porous hydrophobic barrier.” In the rejection the Examiner urges that it would have been obvious to substitute a porous hydrophobic barrier for a check valve “because it would provide a more simply [sic] means of protecting the generator....” Here again, the rejection sets forth no citation to where such a suggestion is found in the references or the prior art. Applicants further urge that Contreras teaching of a venturi system as the means for introducing ozone into the liquid would not permit the substitution of a hydrophobic material for the check valve.

In the event this rejection is maintained, Applicants again respectfully request that the Examiner set forth the teachings relied upon for suggesting both the combination and the proposed modifications. Absent such an indication, Applicants urge that *prima facie* obviousness has not been established and respectfully request withdrawal of this rejection of claim 13. Applicants further urge that in view of the incomplete rejections (several dependent claims having no basis for rejection set forth), should such rejections be maintained, Applicants must be permitted an opportunity to further amend or respond to the rejections only when they have been set forth with sufficient clarity as to permit a response. Applicants therefore submit that the rejections set forth in the Office Action are incomplete relative to dependent claims 2 - 5, 7 - 12 and 14 - 31, the limitations of many of which (other than claim 13), have not been indicated as being found in either Contreras or Burris '993.

Claims 1 – 31 were also newly rejected under 35 USC §103(a) as being unpatentable over Engelhard et al. (5,942,125) in view of Burris '993. Engelhard appears to be directed to an ozone generator that provides an outflow of ozone enriched air introduced to a water source through a sparger. The ozonated water is conveyed through water lines to each of the various handpieces or implements used

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by a dentist during the normal course of providing dental services. The ozone introduced into the water will destroy any microbial pathogens in the water and render it essentially microbe free. Furthermore, the living organisms in any biofilm attendant the walls of the water lines will be destroyed upon contact with the ozone. Engelhard, like Contreras, also relies on the circulation of ozonated water having undissolved ozone gas therein. Moreover, the statement that the water kills living organisms and biofilms confirms this. As noted above, such a teaching is contrary to Burris '993 (no circulation of ozone containing gas), and Applicants respectfully urge that the patents are not properly combined.

Applicants remain puzzled relative to the Examiner's urging the substitution of the Burris '993 teaching of a corona discharge generator for the UV generator of Engelhard. Particularly in view of the fact that the rejection states that Engelhard teaches "an ozone generator." It appears that the Examiner is acknowledging that Engelhard does indeed fail to teach the recited limitation of "an ozone generator using a corona discharge." Then, presumably to bolster the rejection, the Examiner urges that a corona discharge generator is functionally equivalent to a UV generator. Applicants respectfully contend that the Examiner has provided no evidence to support such a position. Moreover, the concentration of ozone produced by a UV generator is roughly ten percent that produced by corona discharge (see e.g., [http://www.ozoneapplications.com/info/cd\\_vs\\_uv.htm](http://www.ozoneapplications.com/info/cd_vs_uv.htm)); it simply would not be obvious to substitute one type of generator for the other as the change in concentrations of ozone produced would require significant alterations to the designs of such systems. Absent a specific teaching to suggest the proposed substitution, Applicants respectfully urge that the present claims have been used as the "recipe" from which elements of unrelated systems are urged for combination and modification. Accordingly, Applicants respectfully traverse the rejection.

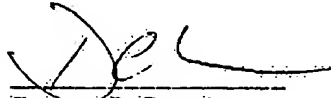
Applicants further submit that the rejections set forth in the Office Action are again incomplete relative to dependent claims 2 - 6, 7 - 12 and 14 - 31, the limitations of many of which (except claim 13), have not been indicated as being found in either Engelhard or Burris '993. Applicants further urge that in view of the incomplete rejections, in the event such rejections are maintained, Applicants should be permitted an opportunity to further amend or respond to the specific rejections.

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In view of the foregoing remarks and amendments, reconsideration of this application and allowance thereof are earnestly solicited. In the event that additional fees are required as a result of this response, including fees for extensions of time, such fees should be charged to USPTO Deposit Account No. 50-2737 for Basch & Nickerson LLP.

In the event the Examiner considers personal contact advantageous to the timely disposition of this case, the Examiner is hereby authorized to call Applicant's attorney, Duane C. Basch, at Telephone Number (585) 899-3970, Penfield, New York.

Respectfully submitted,



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